

**Missouri
Department of
Natural Resources**

Advanced Map Viewer Documentation

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About

This document contains information for using the advanced map viewer applications. These applications provide advanced view and query tools to explore geographic data generated by the department and by other organizations.

Start Page

When a user first starts the application, a start page will appear. This page offers two links and several dropdown boxes to allow the user to customize the initial map. The two links provided are for instructions (this document in PDF format) and a link to provide comments or to report problems with the application. The dropdown boxes below these links allow customization of the map window and map properties:

- Map Content
- Map Extent
- Map Window Size
- Web Browser
- Color Map

Instructions

This link will allow the user to view this document in PDF format. The user can print the document or save it to a location on his or her computer for future reference.

Comments

This link will open a new window that contains a text box where the user can enter comments, questions or problems with the application. Once the user submits comments they will be emailed to staff for further actions if necessary. By default, comments are anonymous. The user may receive a response by including a return email address in the body of the message.

Map Content

The map content dropdown box has two options: 'Statewide Base Map' and 'Choose your own layers'. If the user chooses 'Statewide Base Map', the initial map will contain a predefined set of geographic data including:

- Interstate Highways
- US Highways
- State Highways
- Railroad
- Major and Minor Roads
- County Boundary
- Lakes
- Mississippi River
- Missouri River
- NHD 1:100k (National Hydrography Dataset)
- Municipal
- NAIP 2007 (National Agricultural Imagery Program)

By selecting 'Choose your own layers,' the user can customize the layers that appear in the map. After the initial map is created, the user will be able to add and/or remove layers from the map at any time.

NOTE: This option may not be available in all advanced map viewer applications.

Map Extent

The map extent dropdown box has two options: 'Statewide' and 'Choose Extent'. If the user chooses 'Statewide', the initial map will cover the entire state. If the user chooses 'Choose Extent,' the user will have the opportunity to choose a different starting extent. This will not preclude the user from changing the extent at any time while viewing the map.

Map Window Size

The map window size dropdown box has four options: 'Very Small,' 'Small,' 'Normal' and 'Fullscreen.' The 'Very Small' and 'Small' options result in maps that have a fixed width and height. The size of the 'Very Small' map is approximately 450 pixels wide by 325 pixels tall. The size of the 'Small' map is approximately 600 pixels wide by 480 pixels tall. The 'Normal' setting will result in a map that is approximately 600 pixels wide while the height of the map page will adjust to the height of the user browser window. The 'Fullscreen' setting results in a map page that will automatically adjust to the full height and width of the user window.

NOTE: The smallest maps will draw faster and are recommended for low bandwidth situations.

Web Browser

The web browser dropdown box has two options corresponding to the browsers that are supported by this application: Internet Explorer and Firefox. Other browsers may work; however, they are not supported by this application.

Color Map

The final dropdown box on the initial page contains two options: 'Color' or 'Grayscale.' The setting of this dropdown box determines if the maps are full color or grayscale. Grayscale may help users with a color vision impairment.

Layer Chooser Page

The layer chooser page allows the user to choose what layers they would like in the map. This page is also accessible from the map window so the user may add and/or remove layers at any time during the session. An illustration of the layer chooser window is provided below.

[Start >> Choose Layers](#)

Choose a category of layers by clicking the category name link in the first column. The second column contains a list of layers in that category to choose from. The third column shows the layers you have chosen. Add a layer to the chosen layers list by checking the checkbox next to the layer name in the second column. Un-checking a checkbox will remove the layer from the chosen layers list.

Press to make a map or to choose your initial extent.

CATEGORY [Agriculture]	AVAILABLE LAYERS [1]	CHOSEN LAYERS [12]
Choose a category.	Add All Below	*Add Base Layers Empty
Agriculture Air Aquatic BOUNDARY Census Conservation Corrections Cultural DOQQ Aerial Photo Education Elevation Energy Flood Geodesy Geology Health Land Cover NAIP AERIAL PHOTO Quadrangle Soils TRANSPORTATION Waste WATER	<input checked="" type="checkbox"/> ♦ <input type="checkbox"/> Pesticides	Interstate Highways US Highways State Highways Railroad Major and Minor Roads County Boundary Lakes Mississippi River Missouri River NHD 1:100k Municipal NAIP 2007

The symbol is a link to metadata. ♦ = Point / = Polyline ◊ = Polygon ■ = Raster
 The ✗ symbol means metadata is not available for the layer.
 *Base Layers - Commonly used set of layers including county and municipal boundaries, transportation layers and hydrology.

Near the top of the page is a Start link that resets all settings and returns to the starting page. Below that is a short description of the layer chooser window and two buttons labeled 'Make Map' and 'Choose Initial Extent'. Once the user has chosen the layers for the map, the user may press 'Make Map' to go directly to the map page, or press 'Choose Initial Extent' to choose an alternate starting extent.

To choose layers for the map, the user is presented with three columns (left to right): CATEGORY, AVAILABLE LAYERS and CHOSEN LAYERS. The first column contains several categories of layers. For instance, the 'Geology' category contains data related to the field of geology. Each category name also contains a link which will load all layers in that category into the second column. The current category appears at the top of the column, next to the word 'CATEGORY', in green font. Categories that are currently included in the map will appear in bold blue italic font and the characters will be all capitol letters.

The second column contains layers in the current category that the user can add to or remove from the map. Each layer has a blue **M** icon that serves as a link to metadata for that layer. When clicked, the metadata will open in a new window. Next to the metadata icon is a data type icon. This indicates whether the data are points, polylines, polygons or raster data. A key is provided at the bottom of the page. A checkbox indicates whether the layer is included in the map. Checking or un-checking this box will refresh the page and add the layer to the map (if checked) or remove the layer from the map (if unchecked). At the top of this column is a link called 'Add All Below.' Pressing this link will add all layers in the current category to the list in the third column.

The third column shows the layers that are currently in the map. Layers are ordered in the list as they will appear in the map. Layers added from the second column will be added to the top of the list and will display first on the map. At the top of the third column are two links: 'Add Base Layers' and 'Empty.' The first link will add a predefined set of layers to the map. Those layers are listed above under **Map Content**. The second link will clear the list of all layers.

NOTE: At least one layer must be selected before proceeding to the map page.

Initial Extent Page

This page allows the user to set the initial extent of the map. An illustration of the page is provided below.

Start >> [Choose Layers](#) >> Choose Extent

Select the initial extent of the map:

The initial extent of the map is the initial viewable area of the map. The default setting is statewide, which means that you will initially be looking at the entire state. For example, if you wish to start with Cole County, simply choose 'County' from the 'Choose extent source' box, then choose 'Cole' from the 'Choose County' dropdown box.

Choose extent source: ▼

Choose State: ▼

To complete your map, use the button below.



X: 213366 - 860229 Y: 3974406 - 4509389

At the top are two links: 'Start' and 'Choose Layers.' The first link will take the user back to the starting page with all settings reset to defaults. The second link will take the user back to the layer chooser page to alter the layers to be included in the map.

At the right of the page is a small map depicting the county boundaries and the current starting map extent outlined with a red box. The default extent is statewide. At the left is a dropdown box labeled 'Choose extent source:'. This dropdown box offers several categories from which the user can choose an initial extent. Those categories are:

- State
- City (Population > 1,000)
- State Park or Historic Site
- Conservation Lands
- 1:24k Quadrangle
- Section, Township, Range (PLSS)
- Landgrant (PLSS)
- UTM Zone 15N Easting/Northing
- Decimal Degrees (Latitude / Longitude)
- Degrees, Minutes, Seconds (Latitude / Longitude)
- MoDNR Regions
- Solid Waste Districts
- Missouri House Districts
- Missouri Senate Districts
- State

Once the user chooses a category the screen will be refreshed with additional options for that category. Most categories will result in another dropdown list from which the user must choose a selection, such as Counties, Cities, Department of Natural Resources Regions, etc. Once the selection is made the user must press 'Set New Extent' to set the extent. The map will be updated to show the current extent. Once the initial extent is set, the user must press the 'Make Map' button to proceed to the map page.

A few options allow additional input to set an extent:

Section, Township, Range

This option allows the user to set the initial extent using a section/township/range specification or just a township/range specification. Enter the section in the text box labeled 'Enter Section (1 – 36)'. If the user wants to zoom to an entire township and range, the section box should be left empty. The user must then choose a township and range specification from the dropdown boxes labeled 'Choose Township' and 'Choose Range.' Once this is done, the user can press the 'Set New Extent' button. If the section/township/range specification is not valid, the user will be notified that the extent cannot be set. The user may alter the section/township/range specification and try again or choose a different option to set the initial extent.

Landgrant (PLSS)

The option allows the user to set the extent based on a landgrant in the Public Land Survey System (PLSS). The user must enter a valid landgrant number in the box labeled 'Enter Landgrant Number' and then press 'Set New Extent' to set the extent based on the landgrant. If the landgrant number doesn't exist in the database, the user will be notified that the extent cannot be set. The user may alter the landgrant number and try again or choose a different option to set the initial extent.

Universal Transverse Mercator (UTM) Zone 15N Easting/Northing

This option allows the user to enter a coordinate pair and choose an areal extent in miles. The map will center on the point and zoom to an area approximately equal to the size that was chosen. The coordinate pair must use the North American Datum of 1983 (NAD83).

Decimal Degrees (Latitude / Longitude)

This option works the same as the UTM option, except that the coordinate pair must be in decimal degrees, NAD83 datum.

Degrees, Minutes, Seconds (Latitude / Longitude)

This option works the same at the UTM option, except that the coordinate pair must be in degrees, minutes and seconds, NAD83 datum.

Map Page

Below is an illustration of the map page:



Header

The page header contains two links: 'Back to Start Page' and 'Feedback.' The first link takes the user back to the start page with all settings reset to defaults. The second link opens a new window allowing the user to send feedback or comments and report problems to the application administrators.

Menu Bar and Toolbar

Below the header is the menu bar and below that is the toolbar. These contain all of the functions necessary to interact with the map. The menu bar and toolbar contain the same functions, one in menu form and one in icon form. The toolbar can be turned on or off by using the menu bar item labeled 'Show/Hide Toolbar.'

Status Bar

Below the toolbar is the status bar. The status bar indicates the map projection, the mouse coordinates (as the mouse is moved in the map pane), the approximate size of a map pixel and the scale of the map expressed as a ratio of distance on the map to distance on the ground known as the representative fraction (RF).

Map Pane

Below the status bar are the map pane and the table of contents pane. The map pane on the left contains the interactive map. In the top left corner of the map is the scale or zoom control. It contains a plus '+' at the top and a minus '-' at the bottom, and several dashed lines in between. Pressing the plus '+' will zoom the map in by a predefined amount. Pressing the minus '-' will zoom the map out by a predefined amount. Pressing any of the dashed lines in between will zoom to a pre-defined scale ranging from full statewide extent to street-level scale. The dash corresponding to the current scale range will be filled with black. All other dashes in the control will be filled with white.

In the top right corner is a north arrow indicating which way is north. In the bottom right corner is a scale bar indicating the relative scale of the map. In the bottom left corner is a time/date stamp and a statement indicating that the map was produced by an application generated by the Missouri Department of Natural Resources. Each time the map is refreshed, the time/date stamp will be updated.

Table of Contents Pane

To the right of the map pane is the table of contents pane. This shows all of the layers in the map and indicates whether they are visible. At the top of this pane is the active layer dropdown box. Selecting a layer in this dropdown box will set the active layer. The top three choices will always be 'ALL LAYERS,' 'VISIBLE LAYERS' and 'GRAPHIC LAYER.'

Below the active layer dropdown box are a set of layer order buttons. These buttons allow the user to change the order of the layers in the map. To move a layer up or

down in the table of contents, it must be selected as the active layer. The user must then use the 'Move To Top' button , 'Move Up' button , 'Move Down' button  or 'Move To Bottom' button  to move the layer. After the layer is moved the user must manually refresh the map using the 'Refresh' button .

Below the layer order buttons is the list of layers. Beside each layer is a plus '+' icon used to show more options for each layer. Next to the plus '+' icon is a checkbox to turn the layer visibility on or off. The checkbox will be enabled or disabled and the layer name will change color depending on the scale of the map and the accuracy of each data layer. This allows the user to be notified when a layer will appear in the map as they zoom in, as well as when a layer will disappear due to data accuracy. Some layers will have a layer maximum scale and all layers will have a layer minimum scale assigned to them. The layer maximum scale is the point at which the layer will appear in the map. Some layers are visible at statewide extent and therefore do not have a layer maximum scale assigned to them. All layers will have a layer minimum scale which is based on the accuracy of the data (expressed as a scale) divided by 10. This provides visibility of the layer at scales up to 10 times the scale for which the data were compiled. At this point, the layer will disappear from the map if the user zooms closer.

The table below provides a key to this behavior.

Map Scale vs. Layer Scale	Check Box	Layer Name Color	Layer Visibility
Map greater than the layer min	Disabled	Blue	Not Visible
Map between the layer min and max	Enabled	Blue	Visible
Map less than the layer max but greater than 50% of layer max	Enabled	Red	Visible
Map less than 50% of layer max but greater than 10% of layer max	Enabled	Red and Bold	Visible
Map less than 10% of layer max	Disabled	Gray	Not Visible

As an example, a particular layer may have a layer maximum scale of 1:100,000 and a layer minimum scale of 1:2,400. The layer will not appear in the map until it reaches a scale of 1:100,000. It will be visible to a scale of 1:2,400, whereby it will disappear.

To view the maximum and minimum scales for a layer, and to view other options for the layer, the user can press the '+' icon next to its checkbox. For raster layers, such as aerial photos and digital elevation models, the user will see a link to metadata, the layer max and min scales and a link to layer properties. For all other layers, the user will see the same options for raster layers, with an additional link to set a layer filter.

Pressing the metadata link will open a new window containing metadata for the layer. Pressing the 'SET FILTER' link will open a new window allowing the user to create a filter for the data.

Layer Properties Page

Choosing the layer properties link for a raster layer opens a new window that provides the layer name, the min and max scales and the layer type. Clicking this link for any

other layer will open a new window that will tell the user the layer name, min and max scales, layer type, feature type (point, line or polygon) and layer extent.

In the layer properties window, the user will also have the option to create a label layer for layers that are not raster layers. The user must choose a label field for the layer and press the 'Create Labels' button. When the map is redrawn, labels will be drawn for that layer using the field chosen by the user. To remove the label layer, the user must go back to the table of contents, expand the layer properties, press the 'PROPERTIES' link and press the 'REMOVE LABELS' button.

Set Filter Page

This page allows the user to filter the data as it is drawn on the map. To filter the data also means to restrict the features that are drawn by using criteria applied to a field in the attribute table for that layer.

The user is presented with a step-by-step process to apply a filter. Step 1 is to determine to what field the data should be applied. Step 2 is to enter a value on which to filter the field. Step 3 is to apply the filter using the 'Apply Filter' button. When the filter is applied, only features that satisfy the criteria are drawn.

For instance, if a user only wants to draw Cole County, the user would locate the county layer in the table of contents, expand its options using the '+' icon, and press the 'SET FILTER' link. In the resulting window the user must first choose the field that contains the county name ('NAME_UCASE'). Then, the user must enter the criteria in the value box ('COLE'). Finally, pressing 'Apply Filter' will apply the filter to the layer.

When the user expands the layers options again, instead of seeing a 'SET FILTER' link, the user will see a 'REMOVE FILTER' link. If this link is chosen, the filter will be removed. Also, when a layer has a filter applied to it, the user will see an **F** icon next to the layer name in the table of contents.

Tools and Buttons

Tools and buttons can be found on the toolbar. Each has an accompanying entry in the menu bar above. Buttons carry out their intended actions immediately when selected. An example is the Refresh button. When it is pressed, the map is refreshed immediately. Tools do not carry out their action until they are used in the map window. For example, the pan tool must be selected first by clicking the icon. The icon's border will become red. It can then be used in the map to pan the map. Each tool and button in this application is explained in detail below.

The toolbar is divided into basic and advanced tools. The advanced tools are invisible by default, but can be made visible by clicking the 'Advanced Tools' link at the right end of the toolbar. This will toggle the visibility of the advanced tools. Basic tools and buttons include:

- Toggle Legend

- Pan
- Zoom In
- Zoom Out
- Zoom To Previous Extent
- Quick Zoom
- Zoom To Full Extent
- Zoom To Active Layer
- Identify Features
- Clean Selection
- Hyperlink
- Refresh Map
- Add/Remove Layers
- Create PDF
- Create Bookmark
- Show Instructions

Advanced tools and buttons include the following:

- Measure Distance
- Search/Find
- Query
- Select by Rectangle
- Show Selected Features Table
- Buffer Selected Features
- Select and Buffer
- Clear Graphic Layer
- Clear All
- Graphic Properties
- Add Point
- Add Polyline
- Add Polygon
- Map Properties

Toggle Legend

This button will open the legend panel. This is a floating panel that can be moved around the map window by grabbing its title bar and dragging. When open, this panel contains a graphic legend for the map. A graphic legend shows the layers visible in the map and an example of their symbology. The user can close the panel by pressing the 'X' icon in the upper left corner of the panel. Pressing the toggle legend icon again will open the panel. When the panel is open, the graphic legend will refresh itself each time the map is redrawn. If the legend does not appear in the panel, press the refresh button to redraw the map and the legend will re-appear.

Pan Tool

The pan tool allows the user to pan the map to a different area while keeping the same scale. To use the pan tool the user must click and hold the left mouse button while the cursor is in the interactive map. When the user moves the cursor, the map will move with it. When the mouse button is released the map will be refreshed with its new extent.

Zoom In Tool

The zoom in tool allows the user to zoom in to a portion of the map. This can be used in two ways: single-click or drag-a-rectangle. The single-click method will re-center the map on a point indicated by a single click of the mouse in the interactive map. The map will zoom in a pre-determined amount approximately equal to half the map's current scale.

The drag-a-rectangle method allows the user to define a rectangular area in which to zoom. To specify the rectangular area, the user must hold down the left mouse button in the interactive map on one corner of the rectangular area and then move the mouse to create a rectangular area that will become visible in the map window. When the rectangular area is complete, the user can release the left mouse button, which will refresh the map and zoom to the area defined by the rectangle.

Zoom Out Tool

The zoom out tool works in much the same way as the zoom in tool (see Zoom In Tool above), with one difference. When the user is zooming out using a rectangle, the map will be centered on the rectangle, but the amount that the map will zoom out will be proportional to the size of the rectangle compared to the map. If the rectangle is larger, the map will zoom out more; if the rectangle is smaller, the map will zoom out less.

Zoom To Previous Extent Button

This button will return to the previous extent. The application will remember the last ten zooming extents.

Quick Zoom Button

This button will open the quick zoom dialog box which is designed to assist the user in zooming to predefined areas of the map. The quick zoom works in much the same way as the Extent Page described above. The user is presented with a dropdown box labeled 'Choose Extent Source.' From this list the user can choose from several categories. After the category is selected, the user is presented with a list of options for that category. For instance, if the user were to choose 'County,' a list of counties would appear. Selecting a county and pressing the 'Zoom!' button will change the extent of the map to the area defined by that choice. Several categories are available:

- County
- City (Population > 1,000)
- State Park or Historic Site
- Conservation Lands
- 1:24K Quadrangle
- MoDNR Regions
- Solid Waste Districts
- Missouri House Districts
- Missouri Senate Districts
- State

Some categories require additional input to define the zoom area:

- Section, Township, Range (PLSS)
- Landgrant (PLSS)
- UTM Zone 15N (Easting / Northing)
- Decimal Degrees (Latitude / Longitude)
- Degrees, Minutes, Seconds (Latitude / Longitude)
- Missouri River Mile
- Mississippi River Mile
- Interstate Highway Mile
- Address Matching
- Layer

Section, Township, Range PLSS (Public Land Survey System)

This option allows the user to zoom to an area defined by a township and range specification or a section, township and range specification from the PLSS. The user may enter a section number in the 'Enter Section' box. If the box is left blank, the application will zoom to an entire township and range. Then the user must choose a township and range from the lower two dropdown boxes. Finally, the user must press the 'Zoom!' button to zoom to the area. If the PLSS specification cannot be found, the user will be notified by the application.

Enter Section (1 - 36):

Choose Township:

Choose Range:

Hint: Leave the section box empty to zoom to an entire township and range.

Landgrant PLSS

This option will allow the user to zoom to an area defined by a landgrant in the Public Land Survey System (PLSS). The only option is to enter a landgrant number and press the 'Zoom!' button. The user will be notified if the landgrant number cannot be found.

UTM Zone 15N (Easting / Northing)

Decimal Degrees (Latitude / Longitude)

Degrees, Minutes, Seconds (Latitude / Longitude)

All three of these work in much the same way: they allow the user to enter a coordinate pair, and when the zoom button is pressed, the application will center the map on the coordinates that were entered and zoom to an area that is specified by either a scale or a radius.

Each of the above three options accepts a coordinate pair in a different projection and format. The first option, UTM Zone 15N (Easting / Northing), requires that the user enter the coordinates in the Universal Transverse Mercator (UTM) projection using Zone 15N. The second requires unprojected coordinates in decimal degrees format. The third requires unprojected coordinates in degrees, minutes and seconds format. All of them require that the coordinates use the North American Datum of 1983 (NAD83). The below example is from the decimal degrees option; others are similar.

Latitude	Longitude
<input type="text" value="38.324443252961"/>	<input type="text" value="-92.57902074340"/>
Zoom Using	<input type="button" value="Scale"/> <input type="button" value="v"/>
Scale 1:	<input type="text" value="24000"/>
Radius	<input type="text" value="1600"/> meters
<input type="checkbox"/> Use Map Center	
<input type="button" value="Zoom"/>	

Upon entering the coordinate pair, the user must choose to zoom to a scale or a radius, specified by the 'Zoom Using' dropdown box. Then, the user must specify either a scale or a radius (in meters) depending on the 'Zoom Using' choice. Finally, the user may choose to zoom to the current map center instead of entering a coordinate pair. This will calculate the current map centroid and use it when zooming to a scale or radius.

Missouri/Mississippi River Mile

These options allow the user to zoom to a mile marker along the Missouri or Mississippi rivers. Each one requires that the user enter a mile marker number along the river. Each option also allows the user to zoom to a scale or radius around the point (in meters). If the mile marker is out of range, the user will be notified by the application.

Interstate Highway Mile

This option works in much the same way as the Missouri/Mississippi River Mile option, except it requires that the user choose an interstate highway in Missouri and enters a mile marker along that highway. The same zoom options using scale or radius are available as above.

Address Matching

This option will attempt to match a street address to a physical location, resulting in a coordinate pair that the user can zoom to on the map. The user can enter the street address in either of two ways: a single street address or a street intersection. If the user enters a single street address, the street address must be entered in the 'Street Address' box. If the user wants to find a street intersection, the user must enter the two street names separated by an ampersand symbol (&). For either option, the user must also enter a city name and zip code. When all of the information is entered, pressing the 'Match' button will begin the address matching process.

If matches are found, the user will be presented with a list of candidates. Each candidate will have a score from 0 to 100 and then will be presented in a table sorted by descending scores. Each row has a 'ZOOM' link in the first column to allow the user to zoom to the point. If no matches can be found, the application will notify the user. The user must then revise the user address and try again.

Layer

The final quick zoom option is to change the map extent to the extent of a layer in the map. The user must first choose a layer and then decide whether to zoom to the full extent of the layer, the minimum or the maximum scale. Not all layers have a minimum scale. If the layer does not have a minimum scale, the application will notify the user.

Zoom To Full Extent

This button changes the map extent to the fullest statewide extent.

Zoom To Active Layer

This button zooms to the full extent of the active layer. This requires that the user choose an active layer in the table of contents. The user cannot choose ALL LAYERS, VISIBLE LAYERS or GRAPHICS LAYER for this button.

Identify

This tool shows the attributes of features in the map. Each layer in the table of contents has an attribute table. Each feature in the layer has a row in the attribute table with additional information about the feature. To access that attribute data the user can use the identify tool. To use the tool, zoom to the area containing the features to be identified, and then click once on a feature or drag a rectangle around several features. When the user releases the mouse button, the identify window will open with the attributes in a table.

If the user chooses an active layer in the table of contents, the identify tool will only look for features in that layer. If the user chooses ALL LAYERS, the identify tool will look in the first layer in the table of contents but the user will be allowed to see the attributes of any layer once the identify window opens. If the user choose VISIBLE LAYERS, the identify tool will only look in visible layers. This tool will not work with the GRAPHIC LAYER.

See the illustration below for a sample identify window:

Missouri Department of Natural Resources
Geographic Information Systems

[Return to Map](#)

Identify Results

Click a layer link below to view features identified in that layer or [return to the map](#).

- [Interstate Highways](#)
- [US Highways](#)
- [State Highways](#)
- [Railroad](#)
- [Major and Minor Roads](#)
- [County Boundary](#)
- [Lakes](#)
- [Mississippi River](#)
- [Missouri River](#)
- [NHD 1:100k](#)
- [Municipal](#)
- [NAIP 2007](#)

Identified Layer County Boundary
Number of Features 1
Metadata [Click Here](#)
Action [Select All](#)
Action [Select and Zoom To All](#)
Action [Zoom To All](#)

Records 1 through 1

Options	COUNTYNAME	COUNTYFIPS	COUNTYGNIS	NAME_UCASE	POP_1990	POP_2000
 	Cole	051	758480	COLE	63579	71397

Options	ACRES	SQ_MILES	CNTY_SEAT	CO_CLASS	#SHAPE#	OBJECTID
 	257322.212607	402.06595719	Jefferson City	1	[Geometry]	58

Options	ST_Area(SHAPE)	SdeLength(SHAPE)
 	1041350214.1104	180949.988155368

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The screen is divided into three areas: a list of the layers with viewable attributes, a list of information about the identify operation (and additional functions) and the attributes of the features.

The list of layers is found at the top of the window on the left. If the user chose a single active layer to identify, it will be the only layer listed. If the user chose ALL LAYERS or

VISIBLE LAYERS, multiple layers will be listed. Clicking on a layer link will show the attributes identified for that layer.

The identify operation information can be found at the top on the right, just opposite the layer list. The information contains (top to bottom) the identified layer name, the number of features identified, a metadata link and several other possible actions, including: Select All, Select and Zoom To All, Zoom To All and Export to CSV.

- Select All – This will select all of the identified features in a single layer for other operations. They will be highlighted in the map.
- Select and Zoom To All – This will zoom to the full extent of all of the features for a single layer and select those features for other operations. They will be highlighted in the map.
- Zoom To All – This option will only zoom to the full extent of the identified features for a single layer.
- *Export To CSV – This option will export the attributes to a file in comma separated value (CSV) format. Only the first 500 records will be exported. If more than 500 features are selected, choose a smaller identify area that results in fewer features.

*NOTE: “Export to CSV” is not available in the internet version of the advanced map viewers.

Below the layer list and extra functions is the attribute data presented in a table format. The record number range (e.g. ‘Records 1 through 25’) and a link to return to the map appear at the top of the attributes. If more than 25 features have been identified the user will see a link that says ‘Next Set’. Only 25 features can be displayed at one time. If the user presses the ‘Next Set’ link, the next 25 features will appear. The user may also see a link that says ‘Previous Set’ which will display the previous 25 features and a link that says ‘First Set’ which will take the user all the way back to the first 25 features.

Only seven columns of data can be displayed across the page. The first columns consist of extra functions for zooming and selecting. If the attribute data contains more than six columns of data, the extra columns will be wrapped around and displayed farther down the page until all columns are displayed. The first column contains two icons that, when clicked, zoom to the feature or selects the feature. To return to the map without zooming or selecting, click the ‘Return to Map’ link at the top of the attributes table.

Clear Selection

This button clears any selected features. Any features that are selected, or highlighted in the map, will be de-selected.

Hyperlink

This tool will search for hyperlinks for a feature. To use the tool, place the cursor over a feature and press the left mouse button. If hyperlinks are found, they will be presented

to the user in a new window. The user can then follow these hyperlinks to view the information that they present. If no hyperlinks are found, the user will be notified.

Refresh Map

This button will refresh or redraw the map immediately.

Add/Remove Layers

This button will take the user to the “Layer Chooser” page to add layers to or remove layers from the map. When the user is done adding and/or removing layers, the user can return the map.

Create PDF

This button will allow the user to create a PDF document from the map using a pre-defined map layout. The user will first be asked to enter a map title and description to be displayed in the PDF document. After pressing the ‘Create PDF’ button, the user PDF file will be created and sent to the browser where the user can save it or, in most browsers, it will open with a PDF reader by default.

Create Bookmark

This button will create a bookmark to the current map that the user can save in favorites or copy and paste into a document or email. When the user presses the button a new window will open with a link labeled ‘This is the user link.’ By right-clicking on this link using Internet Explorer, the user can choose ‘Copy to Shortcut’ to copy the link and paste it into another document, or choose ‘Add to favorites...’ to add the link to the favorites menu.

Show Instructions

This button will download the PDF version of this help file.

Measure Distance

This tool will allow the user to measure distances on the map. Once the user selects the tool a small panel will open in the browser window. The user can move this panel by grabbing the title bar and dragging it to a new location. The user must click once in the map to use the measure tool. Each click creates a line in the map. The length of the line will be added in the measure panel. The total length will be shown in meters, kilometers, feet and miles. To reset the measure tool, press the ‘Reset’ button in the measure panel. To remove the lines, refresh the map.

Search/Find

This button opens a new window that enables the user to search for features by an attribute value. The user must first choose a layer to search and then a field. When selecting a field the first choice will always be ‘[ALL FIELDS]’. This will search all fields in the table. If the user knows that a value lies in just one field, choosing that field will make the search faster. After choosing a field, the user should enter a word, phrase or number. The user can enter portions of words or phrases. For example, to find all

counties containing the letter 'C', the user would enter 'C' in the search value box, then choose 'Search' to begin the search.

NOTE: It is not necessary to include quotation marks around words or phrases.

If the search found features, those attributes will be shown in the results window. If no features are found, the 'Number of Features' will indicate '0' in the results window. This window has the same functions as the identify window (see the Identify operation above).

Select by Rectangle

This tool allows the user to select features by dragging a rectangle around them. Features are selected within the active layer, which the user must set in the table of contents. The user cannot use ALL LAYERS, VISIBLE LAYERS or GRAPHIC LAYER with this tool. To start dragging a rectangle, click and hold the left mouse button in the map, then move the mouse to draw the rectangle. Release the mouse button to complete the rectangle. Features of the active layer that are within the rectangle will be highlighted yellow.

Show Selected Features Table

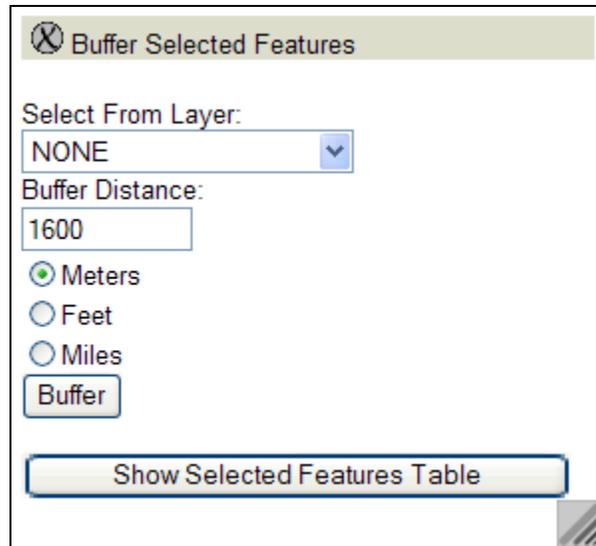
There are many ways to select features such as using the select by rectangle tool or by using the identify tool, then pressing any of the select features links in the result window. To view attributes of the selected features, the user must set the active layer to the layer that contains the selected features and then press the button. The Attributes of Selected Features window will open. This window includes many of the same options as the identify window (see Identify tool above).

Buffer Selected Features

This button will assist in buffering selected features. By buffering a feature, the user can create a buffer graphic that is bigger than the original. If the user buffers a point, the buffer will be a circle around the point. If the user buffers a line, the buffer will be a polygon around the line. If the user buffers a polygon, the buffer will be a bigger polygon. The primary use of this tool is to search for features from a layer that are within a distance of features from another layer.

Consider, for example, that a point layer contains houses, some of which are for sale. Another layer contains city parks. To look for houses for sale that are less than a mile from a city park, first select all of the houses for sale, then use the Buffer Selected Features tool to create a one mile buffer around each house and look for parks that are within those buffers.

To use the tool, the user must already have features selected in one layer. Make this layer the active layer in the table of contents, then press the 'Buffer Selected Features' button and a new panel will appear in the browser window (see below).



The first dropdown box allows the user to select features from another layer that will be within the new buffer. The user can select a layer or choose 'NONE'. If the user chooses 'NONE', a buffer will be created, drawn and added to the custom graphics layer (see Graphic Properties below), but no additional selections will be made.

The next box allows the user to enter a buffer distance. Below the distance box the user can choose the units of the distance in meters, feet or miles. Finally, pressing the 'Buffer' button will create the buffer and select features from another layer as specified in the 'Select From Layer' dropdown box.

If no selection was made (i.e. the 'Select From Layer' is set to NONE) the buffer will be created and the map will be redrawn. If a selection layer was chosen, features that lie within the buffer will be selected. The user can use the 'Show Selected Features Table' button to view the attributes of the selected features.

If the user chooses to select features from another layer, the current selection will be replaced. For example, to select all cities within one county, select the county and then open the Buffer Selected Features panel and make the following settings:

Select From Layer: *Cities*
Buffer Distance: *0*
Units: *Miles (doesn't matter since the distance is zero)*

When the 'Buffer' button is selected, all of the cities in that county will be selected, but the county will not be selected. The user can only have one layer with selected features at any time. Once a new selection is made, the previous selection will be cleared.

Select and Buffer

This tool works much the same way as the 'Buffer Selected Features' panel, except there is no need to make the user selection first. This tool makes the selection and

buffer all in one operation. To use the tool, choose an active layer from which to make the initial selection. Press the 'Select and Buffer' icon in the toolbar. A new panel will open that is very similar to the 'Buffer Selected Features' panel, except there is no 'Buffer' button.

Next, set the 'Select From Layer' to either a layer in the map or to 'NONE', then, set the user buffer distance and buffer units. To complete the operation, move the cursor into the map and drag a rectangle around one or more features in the active layer.

When the user releases the mouse button, the following actions will occur:

- features will be selected in the active layer that fall within the rectangle,
- a buffer will be created around these features using the supplied distance and units,
- if a 'Select From Layer' has been specified, features from this layer will be selected that fall within this buffer, and,
- the map will be refreshed and the buffer (and selected features) will be shown.

If the user has chosen a 'Select From Layer,' the user can use the 'Show Selected Features Table' to view the attributes of the selected features.

Clear Graphic Layer

This button clears all custom graphics from the map. Custom graphics are created by several means and can be viewed by using the Graphic Properties button.

Clear All

This button clears all graphics and selections from the map.

Graphic Properties

This button opens the graphic properties window. This window shows all of the custom graphics that have been added to the map. If the map contains no graphics, the user will be notified and allowed to return the map. If the map contains graphics they will be listed on this page in a table. Each graphic will have an identifier (or text in the case of labels), a graphic type and a link to change the graphic symbology (except in the case of labels).

To change the symbology for a graphic, click its 'Change Symbol' link in the graphics table. For a point, the user will be able to change the marker color, marker size and marker graphic.

Symbol Editor - Type: Polygon

Graphic ID: 476060768

Select an outline color: CURRENT COLOR

Select an outline thickness: 5

Select an outline type: None

Select a fill color: CURRENT COLOR

Select a fill type: Solid

Set New Symbol Using These Settings

The user can make the fill color transparent for polygons by checking the 'Transparent' checkbox in the color chooser for 'Select a fill color.'

Besides changing graphic symbology, the graphic properties window also allows the user to use the graphics in other operations. To help manage the graphics, the user can delete a single graphic using the option labeled '1. DELETE.' Select the user graphic by its identifier using the dropdown box, then press the DELETE button. The graphic will be removed from the list and from the map.

Option number 2 is to use a graphic in an identify operation, which will identify features from a layer that intersect a graphic. Choose the graphic to use in the identify operation and the layer to be identified and press the 'Identify' button. The user will be taken to the identify results window (see Identify tool).

Option number 3 is to use the graphic in a select operation. The user can either select and view the selection in the map or select and view the attributes of selected features. If the user chooses to go to the map, the user can still view the attributes of selected features by making the selection layer the active layer and pressing the 'Show Selected Features Table' button.

Option number 4 is to create a buffer around a graphic and add the new buffer shape to the graphic list. Choose a graphic to buffer, then specify a buffer distance and buffer units. Finally, give the buffer shape a new identifier and press the 'Buffer' button. The user can now use this new buffer shape in any of the other options above or buffer it again.

Add Point

This tool will add a custom graphic in the form of a point. After selecting this tool, the user can click in the map where the point graphic should be. The 'Add Point' window will open. At the top will be the coordinates of the point in three formats:

- UTM, Zone 15, NAD83;
- decimal degrees, NAD83; and,
- degrees, minutes, seconds/NAD83.

In the bottom left, a box will appear that will allow the user to customize the user point graphic. First, the user should give the graphic a unique identifier or name for easy reference in the graphic properties page. Next, the user can put a label on the point by entering text in the 'Marker Label' box. Then, the user can specify how far the label will be from the point in pixels in both the X and Y directions. The defaults will place the label up and to the right of the point. Next is the marker color, which sets the color of the marker; this color defaults to black. The user also can choose the label background color, which sets the color of the background behind the label text; it defaults to transparent. Finally, the user can choose the marker graphic from a list of graphics or choose 'No Marker' to display a label with no point. Once all the user selections are made, press the 'Mark Location On Map' button. The program will return to the map window and draw the new point.

Add Polyline

This tool will add a custom graphic in the form of a polyline. To start the user polyline, click on a point in the map. This will 'anchor' a line in the map. Click again to add vertices to the line. On the last point, hold down the SHIFT button on the keyboard while clicking the mouse. This will notify the application that the polyline is complete.

A new window will open that will contain a summary of the new polyline, including a shape identifier, pixel accuracy, line length and length accuracy in meters, miles and feet. At the top of the window is a text box where the user can enter a new shape identifier if the user doesn't wish to accept the default. Press the 'Submit' button to set the new identifier. The map window will refresh and the new polyline will be drawn.

Add Polygon

This tool will add a custom graphic in the form of a polygon. To start the user polygon, click on a point in the map. This will 'anchor' a line in the map. Click again to add vertices to the polygon. On the last point, hold down the SHIFT button on the keyboard while clicking the mouse.

NOTE: There is no need to go back to the first vertex in the polygon. The application will automatically complete the polygon, connecting the last vertex to the first.

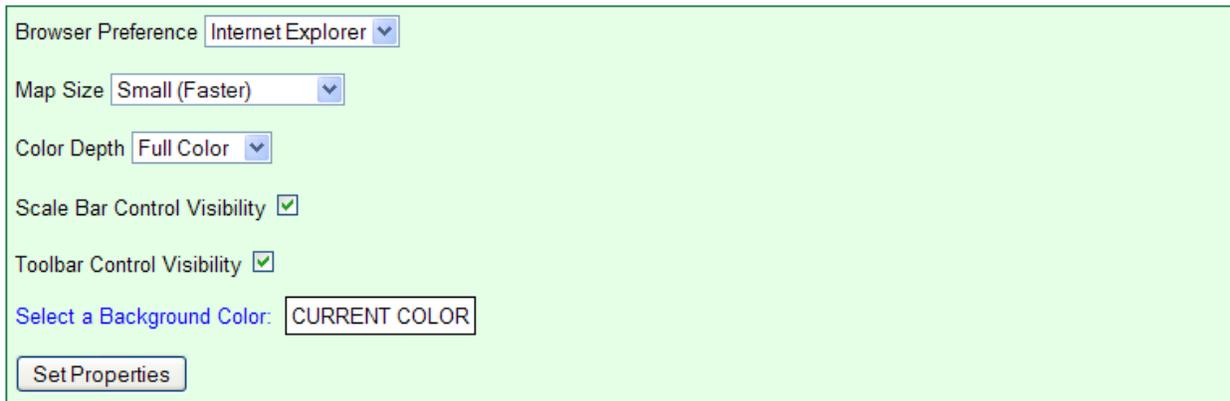
A new window will open that will contain a summary of the new polygon, including a shape identifier, pixel accuracy, polygon area in sq. meters, sq. miles, sq. feet and acres, and the centroid of the polygon as a coordinate pair in UTM / Zone 15 / NAD83.

At the top of the window is a text box where the user can enter a new shape identifier if the user doesn't wish to accept the default. Press the 'Submit' button to set the new identifier. The map window will refresh and the new polygon will be drawn.

Map Properties

This button will open a window where the user can set various map settings. Once the user settings are made, press the 'Set Properties' button and the user will be notified at the top of the window if the settings are successful. Then, press the 'Return to Map' link at the bottom of the window.

Map Properties



Browser Preference

Map Size

Color Depth

Scale Bar Control Visibility

Toolbar Control Visibility

Select a Background Color:

Browser Preference

This can be set to Internet Explorer or Firefox.

Map Size

This can be set to Very Small, Small, Normal or Fullscreen. The 'Very Small' and 'Small' options result in maps that have a fixed width and height. The size of the 'Very Small' map is approximately 450 pixels wide by 325 pixels tall. The size of the 'Small' map is approximately 600 pixels wide by 480 pixels tall. The 'Normal' setting will result in a map that is approximately 600 pixels wide. The height of the map page will adjust to the height of the user's browser window. The 'Fullscreen' setting results in a map page that will automatically adjust to the full height and width of the user window.

NOTE: The smallest maps will draw faster and are recommended for low bandwidth situations.

Color Depth

This setting will tell the application to draw the map as a full-color map (default) or a grayscale map to assist those with color vision impairments.

Scale Bar Visibility Control

This checkbox will toggle the visibility of the scale bar control, which appears in the upper left corner of the map.

Toolbar Visibility Control

This checkbox will toggle the visibility of the toolbar.

Select a Background Color

This will allow the user to set a background color for the map. The default background color is white.